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Abstract

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Project Title:	Novel sEH Inhibitors for the Therapeutic Treatment of Hypertension and Inflammation

Abstract: *DESCRIPTION (provided by applicant):* Hypertension and vascular inflammation are associated with cardiovascular diseases (CVD), the primary cause of death in our society. Because a large proportion of patients are not responding to current therapies, the next generation of drugs will not only need to reduce BP but also treat vascular and renal inflammation as well as reduce smooth muscle cell proliferation which in turn should also reduce hypertension related organ damage. Using inhibitors developed previously in our laboratory, we showed that the inhibition of soluble epoxide hydrolase (sEH) has therapeutic application in the treatment of hypertension and several inflammatory diseases. While these inhibitors are scientifically useful, the low solubility and relatively fast metabolism of our first generation inhibitors makes them less than therapeutically efficient, underlying the need for novel inhibitor structures. Toward such a goal, we recently developed a new fluorescent assay for sEH that is adequate for high throughput screening. Therefore, we are proposing to use this assay to screen the MLSCN library of compounds to identify new chemical leads for sEH inhibition, and thus for the therapeutic treatment of hypertension and inflammation.

Thesaurus Terms: Hypertension, vascular inflammation, cardiovascular disease, CVD, renal inflammation, soluble epoxide hydrolase, she, inflammatory disease, fluorescent assay, Molecular Libraries Screening Centers Network, MLSCN

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